

## METHOD AND SYSTEM FOR REDUCING POTENTIAL INTERFERENCE IN AN IMPULSE RADIO

### ABSTRACT OF THE DISCLOSURE

Potential interference is reduced in an impulse radio. A signal including an impulse signal and potential interference is received by the impulse radio. The impulse signal includes a sequence of impulses. The sequence of impulses of the received signal is sampled at a sequence of data sample times to produce a sequence of data samples. The received signal is also sampled at a plurality of time offsets from each of the data sample times to produce a plurality of nulling samples corresponding to each of the data samples. A separate sequence of nulling samples for each of the time offsets is thereby produced. Each of the data samples is then separately combined with a corresponding nulling sample from each of the separate sequences of nulling samples to produce a separate sequence of adjusted samples corresponding to each of the time offsets. A separate quality metric, representative of a signal-to-interference level, is then determined for each of the separate sequences of adjusted samples. A preferred sequence of samples is selected for further signal processing based on the determined quality metrics. Alternatively or additionally, one of the plurality of time offsets is selected as the preferred time offset based on the determined quality metrics.